

Amendments to the Claims:

Claim 1 (Currently Amended) An a-WO₃ gate gated ISFET device, comprising:
a semiconductor substrate;
a gate oxide layer on the semiconductor substrate;
an a-WO₃ layer formed by RF-sputtering overlying the gate oxide layer to form an a-WO₃ gate;
a source/drain in the semiconductor substrate beside the a-WO₃ gate;
a metal wire on the source/drain; and
a sealing layer overlying the metal wire, and exposing the a-WO₃ layer.

Claim 2 (Original) The device as claimed in claim 1, wherein the length of the channel, the width of the channel and ratio of width/length of the channel of the ISFET is about 50μm, 1000μm, and 20 respectively.

Claim 3 (Original) The device as claimed in claim 1, wherein the semiconductor substrate is P-type.

Claim 4 (Original) The device as claimed in claim 1, wherein the resistivity of the semiconductor substrate ranges from 8 to 12 Ω•cm.

Claim 5 (Original) The device as claimed in claim 1, wherein the lattice parameter of the semiconductor is (1,0,0).

Claim 6 (Original) The device as claimed in claim 1, wherein the thickness of the gate oxide is about 1000Å.

Claim 7 (Original) The device as claimed in claim 1, wherein the thickness of the tungsten oxide layer is at least 1000Å.

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Claim 8 (Original) The device as claimed in claim 1, wherein the metal wire consists of Al.

Claim 9 (Original) The device as claimed in claim 1, wherein the sealing layer consists of epoxide resin.

Claim 10 (Original) The device as claimed in claim 1, wherein the source/drain is N-type.

Claim 11 (Original) The device as claimed in claim 10, wherein the N-type impurities within the source/drain consist of phosphorous.
